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ABSTRACT

This paper reviews the research on sex differences in intellectual functioning as it relates to verbal abilities, spatial abilities, and reading aptitudes. Research supports such statements as: sex aptitudes do not become significantly apparent until adolescence, males perform better than females on problems involving field-indep (picking out one image, sound, etc., from many); males seem to have a more favorable attitude toward problem solution than do females; girls' verbal abilities mature more rapidly in early life; and during the period from preschool to early adolescence the sexes are very similar in their verbal abilities, but at about age 11, the sexes begin to diverge, with female superiority increasing through high school and possibly beyond. (TS)

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REVIEW OF RESEARCH

A POSSIBILITY: SEVERAL REALISTIC SEX DIFFERENCES

For Presentation at Symposium

UNDERSTANDING & PROMOTING POSITIVE
SEX ROLE IDENTIFICATION THROUGH THE
READING CURRICULUM

2:00 - 4:45 P.M.

Royal Inn - Monopoly A

May 12, 1976

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REVIEW OF RESEARCH

A Possibility: Several Realistic Sex Differences

Several reviews of literature on sex differences in intellectual functioning show no consistent differences in tests of total (or composite) abilities. Furthermore, the literature indicates that the range of differences within one sex is generally larger than the differences between sexes.

Clear sex differences in intellectual functioning have been found, however, in the following areas: verbal abilities, spatial abilities and math aptitudes. These differences in aptitudes do not become significantly apparent until adolescence. Studies of children's aptitudes prior to adolescence do not provide consistent results and do not demonstrate significant differences between sexes.

After age 11, however, the standard deviation for boys tends to be between 5 and 6% higher than that for girls in those aptitudes cited above. The only significant differences in aptitudes among younger children appear to exist in children of disadvantaged backgrounds. Studies with disadvantaged youngsters show the girls to excel on verbal as well as on mathematical aptitudes even prior to adolescence.

The aptitudes which emerge in adolescence as showing sex differences are extremely critical in problem solving and, therefore, warrant close attention. Although differences in quantitative skills occur in adolescence it is possible that what test scores reflect is not that boys are superior in math itself but that they are superior in a separate dimension - spatial ability. (Maccoby & Jacklin, 1974). It is also possible that problem solving ability whether it apply to quantitative or qualitative problems, includes the ability to break set (the ability to abandon a once-adopted set when a new approach seems required for successful problem solution). There may be a sex difference favoring

boys and men in set breaking (Maccoby & Jacklin, 1974).

It is generally accepted that males perform better than females on problems involving field-indep (picking out one image, sound, etc., from many). It is also thought that as a child matures s(he) becomes increasingly field-indep. Saarini (1973) found however, that the most cognitively mature and complex girls appear to exhibit greater field dependence than their less mature peers (both boys and girls)! Sex role expectations and stereotypes may clearly explain this phenomenon. Males' superiority in field-indep is confined to visual-spatial tasks. There is no sex difference on tests of selective listening and tactual tasks requiring disembedding (Maccoby & Jacklin, 1974).

There is also some evidence that type and content of problem make a difference in performance (i.e., males were better in spatial problems whereas no differences were found in human relations problems). Milton (1957) found that when the content of problems was made relevant to the traditionally female role (cooking, shopping, household chores) males no longer outperformed females on such problems. It was surmised that girls perceived stocks problems, for instance, as being more difficult than did males. (Graf & Riddell, 1972).

Males also seem to have a more favorable attitude toward problem solution and, therefore, exhibit more task persistence than do females (Garai & Scheinfeld, 1968). Also, girls, particularly older girls, are more dependent on praise or approval and they demonstrate less mastery on a mechanical problem - solving task stereotyped as more appropriate for boys (Horter, 1975).

In a problem solving task it has also been found that if the problem requires use of manipulatives rather than pencil-paper it is more easily solved by males. The sex of the examiner also influences the test results (Lawson, 1975).

Differences between the sexes in cognitive style have characterized girls as showing more attention to detail, using narrower categories in classification of material and giving more routine responses. Boys are said to use broader categories for classification and suggest more novel elements for inclusion in

their categories (Sutton-Smith, 1966).

Maccoby & Jacklin (1974) have concluded that it is probably true that girls' verbal abilities mature somewhat more rapidly in early life, although there are a number of recent studies in which no sex difference has been found. Recent SAT scores, however, are not showing the great differences between the sexes that were previously found. (Harnischfeger & Wiley, 1976). The Hopkins program showed no significant differences (Fox, 1975). Dwyer (1975) has speculated that increased effort to represent activities traditionally interesting to boys in reading textbooks as well as the overall educative effort to improve boys' interest in reading may account for some of this change.

During the period from preschool to early adolescence the sexes are very similar in their verbal abilities. At about age 11, the sexes begin go diverge with female superiority increasing through high school and possibly beyond. Girls score higher on tasks involving both receptive and productive language, and on "high'level" verbal tasks (analogies, comprehension of difficult written material, creative writing) as well as upon the "lower-level" measures (fluency). The magnitude of the female advantage varies, being most commonly about one-quarter of a standard deviation.

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